



The City Seen from an Aeroplane

Nathalie Roseau

► To cite this version:

Nathalie Roseau. The City Seen from an Aeroplane: Distorted Reflections and Urban Futures. Dorian Mark, Poussin Frédéric. Seeing from above: the aerial view in visual culture, IBTauris, pp.210-226, 2013, 978-1780764610. hal-00941313

HAL Id: hal-00941313

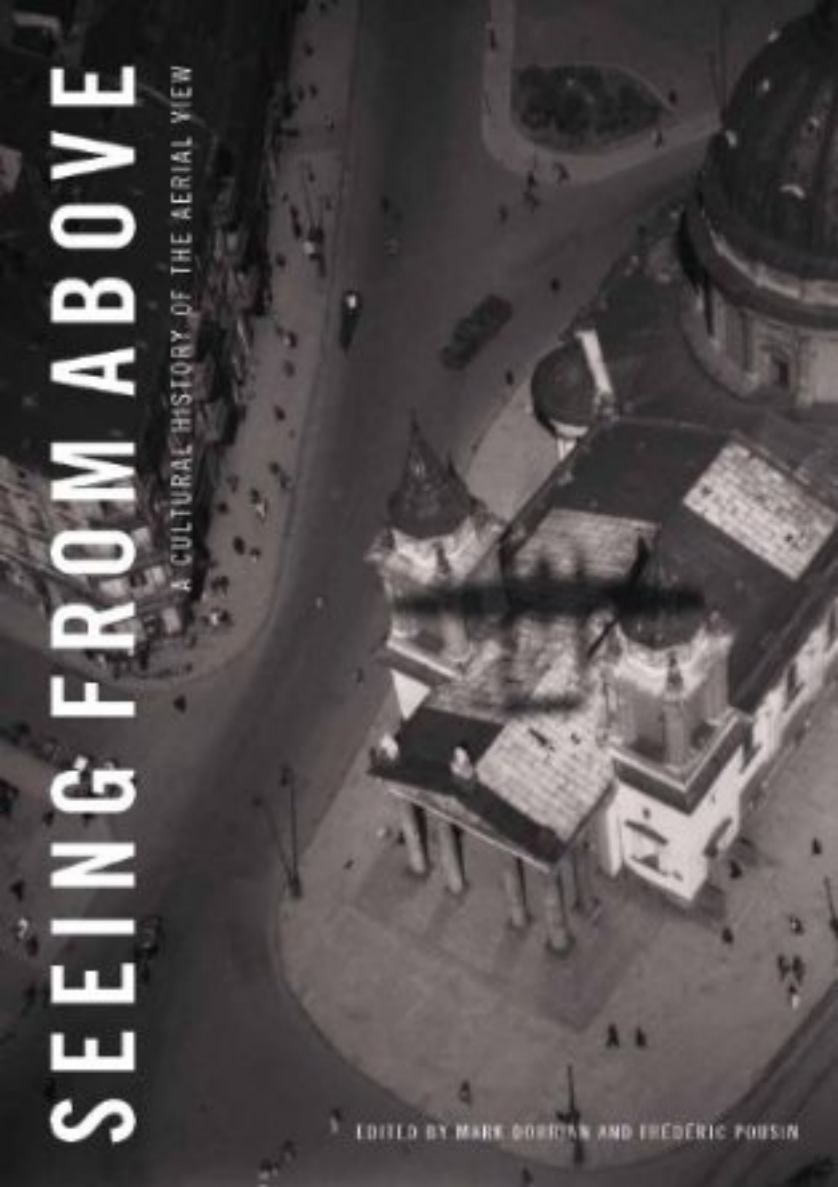
<https://hal-enpc.archives-ouvertes.fr/hal-00941313>

Submitted on 28 Mar 2016

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

SEEING FROM ABOVE

An aerial, black and white photograph of a city square. In the center is a large, light-colored building with a complex roofline, including a prominent square tower with a dome. To the right, a large, dark, rounded dome of another building is visible. The square is paved and contains several small figures of people and some vintage cars, suggesting a historical or archival context. The overall tone is somber and historical.

A CULTURAL HISTORY OF THE AERIAL VIEW

EDITED BY MARK DORRAN AND FRÉDÉRIC POISSIN

12

The City Seen from the Aeroplane

Distorted Reflections and Urban Futures

Nathalie Roseau

How did the invention of flight contribute to the imaginary of the modern city? What influence did it have on the urban fabric? This chapter will explore these twinned questions by examining the representations and practices of *seeing* the city from the aerial vantage point. *Seen* from the air, the city is first of all that which will be unveiled by aerial photography. The history of this view starts well before the beginning of aviation, with panoramas taken from belfries and belvederes, followed by the first aerostatic photographs obtained from a balloon by Nadar in 1858, and by the on-board ascensions devised by Henri Giffard at the Cour des Tuileries in 1878, which enabled people in their thousands to experience the sensation of height.

THE MEDIATISATION OF A NEW VISION

Léon Gimpel, a photographer who had come to attention during the very first major aviation shows, joined the movement initiated by Nadar.¹ In August 1909, during the Great Aviation Week of Champagne, held at Bétheny, hundreds of thousands of spectators came to see the heroes of the air and their exploits. Together with many of his colleagues, Gimpel went along to take the pulse of the event. On the final day of the air show he climbed on board the dirigible Zodiac III with the aviator Hubert Latham and used his camera to pan across the crowds

who had gathered below to witness the ascent of the aviators. Instantaneous and airborne, photography took the measure of elevation-induced dizziness, thus intensifying all the more the spectacular nature of the event. The photographs were subsequently published in the journal *L'Illustration* (*The Illustration*), whose circulation at the time ran to several hundred thousand.² The dissemination of the victory over the air was therefore set in motion through diverse media (some in their infancy), which would then rely on these exploits to innovate further. Periodicals, events organisers, sponsors and publicists multiplied images and unprecedented formats in order to disseminate the advancements made by aviation, conveying the unreal in real time. The first newsreels produced in France for the cinematographic news chain Pathé-Gaumont expressed the utterly filmic dimension of aerial navigation.

With his aerial lens trained on urban life, Gimpel would bring legibility to newsworthy events which arose, but whose meaning was not yet comprehensible. From public celebrations to accidents, the photographer would capture all the novel scenes thrown up by the hectic life of the Parisian metropolis. In 1913 Gimpel climbed to the top of the July Column in the centre of the Place de la Bastille and captured the dispersal of the crowds in the wake of the carnival procession that marked the mid-point of Lent. Published as a double-page spread in *L'Illustration*, the photograph bore the following caption: 'From below, seen in vanishing perspective, [the crowds] could give the impression of a multitude; seen from the elevated point where the photograph was taken, the foreshortening of the figures makes the crowds seem strangely rarefied. But how entertaining to the eye is the sheer variety of movements and postures, when studied up close!'³ Crowds, movement, spectacle: these metropolitan conditions that emerged at the turn of the twentieth century were fastened-down as images, the photographer presenting at a stroke – thanks to aerial detachment – a reality that was otherwise imperceptible (Figure 12.1).

In their turn, painters appropriated this new visual space. When he painted *Tower, first study* (1909), Robert Delaunay reconfigured Parisian shapes from on high. He took inspiration from a photographic postcard showing Count de Lambert's circumnavigation of the Eiffel Tower, which had been executed a short time before. Being quite taken aback, Henri Rousseau, 'Le Douanier', asked him how he achieved the view: 'You went to what street? ... You saw it from which side?'⁴ Delaunay pursued his explorations and started working at a bigger scale, experimenting with distortions. He revisited the Eiffel Tower from a variety of angles, from above and from below. The city became panoramic, its roofs composing a Cubist mosaic, and was shown in *The City No. 2* (1910) as a grey-green sea from which the Eiffel Tower and a few dotted red lights emerged. Here, the painter had no longer created an unusual image that baffled his painter



[12.1] Léon Gimpel, 'The Parisian Crowd in the Place de la Bastille', 27 February 1913.

friends, but – inspired by the new times, those of a spatial revolution that celebrated vertigo and instability – had aimed at a reconfiguration of reality.

The radical nature of the aerial view, propelling as it did the use of unprecedented enframings and perspectives, won over the arts in their various movements – Cubist, Suprematist, Futurist. With his *Our Future is in the Air*, a still life painted in 1912, Picasso himself drew up salient parallels between the conquest of the air and the upcoming artistic revolutions.⁵ The reduction of depth, the elimination of superfluous detail, the use of simple compositional shapes, the unification of the pictorial field, all these represented – as Gertrude Stein later remarked – so many elements of convergence with the representation of the earth's surface seen from the aeroplane:

When I was in America I started flying frequently. From the airplane I saw there, on earth, the jumbled lines of Picasso going back and forth, coming into being and dispersing; I saw Braque's simplified solutions, the wandering line of Masson. Yes, all these I saw and understood, once again, that a creative maker always belongs to modernity.⁶

In this creative quest, the Italian Futurists avidly appropriated the aerial theme for themselves in order to put forth new visual representations. Shortly after Wilbur Wright had executed a series of record-breaking flights at Le Mans, Filippo Marinetti published, on the front page of the newspaper *Le Figaro* of 20 February 1909, his Futurist Manifesto.⁷ There he exalts the ‘roaring car’ and the beauty of speed, while at the same time unhinging all academic institutions. Despite its dark tenor, the movement started by Marinetti attracted talented artists; one of them was Umberto Boccioni, who would stress the vertical widening of the aerial gaze: ‘The future will continue to increase architectural possibilities, in height and depth. Life will therefore pierce the age-old horizontal of the ground with the infinite vertical scaling of lifts and with the spirals of airplanes and dirigibles.’⁸ This zest for the third-dimension revolution was to continue unabated. For the second generation of Italian Futurism, which included the painters Tullio Crali and Cesare Andreoni and spanned primarily the interwar period, these spatial explorations would persist with *aeropittura*, which took into account the dynamism and simultaneity of aerial vision.⁹

THE SEARCH FOR A REPRESENTABLE WHOLE

Broader overviews, foreshortened distances, widening frames of perception: thus the aerial understanding of the world contributed to the creation of a new space of vision. It enabled a new artistic and conceptual reading of the urban environment, whose legibility had been dimmed by its repeated expansions. Triggered by massive-scale industrialisation and its consequent population drain from rural areas, by the increase in circulation and its corollaries – pollution and traffic jams – the expansion of cities after World War I accelerated explosively out of the physical and regulatory corsets that had bound them.¹⁰ Vertical densification and ground-level sprawl defied all limits known until then. Paris continued to grow, to the extent that there was talk of a *Grand Paris* akin to a *Gross Berlin* or a *Greater London*.¹¹ The first French urban planning law, the so-called Cornudet law, which obliged cities of more than 10,000 inhabitants to plan their further development, was voted in in 1919, at the same time as the decommissioning of the Parisian city walls. And yet, these new legislative measures struggled under the challenge posed by the Parisian metropolis, whose demographic growth had shifted primarily to the peripheries. In fact, the first competition for the enlargement of the capital and the planning of the metropolitan area was launched that same year and was won by Léon Jaussely.¹²

Concurrent with the opening of these new territorial boundaries at the beginning of the 1920s was the dawn of the first campaigns of urban aerial photography. For many large cities this marked the advent of a new cadastral means of representation. In France, through the work of aeronautical companies that were demilitarised after World War I, aerial photography immediately adopted the cause of urban planning, then still in its infancy.¹³ On the other side of the Atlantic, the first aerial survey of New York's urban fabric was executed by the Fairchild Aerial Camera Corporation. Beginning with 1921, the company rendered visible through vertical imaging the complete urbanisation of the Manhattan grid. But it was in 1924 that this device revealed its full visual potential, when it realised the Sectional Aerial Map of the City of New York, a photomosaic that showed all five *boroughs* and revealed the new scale of the metropolis.¹⁴

Crystallised in this way, urban reality – seen both precisely and as a whole – became either celebrated or, on the contrary, *condemned*, as was the case with Le Corbusier's indictment, pronounced in his profusely illustrated book, *Aircraft* (1935). By donning the goggles of the pilot, architects finally acquired the means of reading and understanding the new scales and sizes that were no longer possible to apprehend when seen from the ground or even in plan. In addition, the aerial view acted as a stimulant to their creative imagination. Scrutinising the city from his office balcony, the celebrated New York-based draughtsman Hugh Ferriss rendered it in perspective in his visionary manifesto *The Metropolis of Tomorrow* (1929). This simultaneous process of clarification and subsequent reconfiguration testifies to the vectorial aspect of the aerial imagination, of which Gaston Bachelard wrote in his *Air and Dreams: Imagination in Movement* (1943).¹⁵

In fact, the aerial imagination enabled architects to devote themselves to rationalisation. The verticality of the aerial dream brought about a principle of order and a law of kinship, as the distancing revealed to the dreamer, in a transparent and simplified way, the concentrated image of his subject. 'At plus 5 miles you turn into a regional planner! For right down there below you is a whole region plain to see, and you can't help wanting to design it, or redesign it. Try, someday, a series of thumbnail sketches in color showing how everything changes and simplifies as you go up'.¹⁶ At the end of the 1940s Hugh Ferriss designed a cartographic vision of the city and its environs, which was prefigured by the scale of the aerial view. 'To draw or to redraw': vision and projection became one, thanks to the limpidity offered by the aerial view. A new dialectic of space was invented. Just like Paul-Henri Chombart de Lauwe, author of *The Aerial Discovery of the World*,¹⁷ who interrogated urban space using aerial views, Ferriss also ordered hierarchically and made connections between viewpoint height and projection scale, thus relating detail to whole, establishing correlations between

hitherto disparate registers, and further expanding the powers of the architect, who was now able to draw everything.

These facilities made possible by the aerial view would go on to mark out, to this day, the history of city planning and design. From the first cadastral surveys of the 1920s to the satellite images streamed by Google Earth and now at the fingertips of anyone prosthetically equipped with a mobile digital device, the desire for control over a totality whose representability eludes those who roam on the ground would determine the lightning-speed advances in aerial – and then satellite – imaging.

These modes of representation are by no means neutral, for they transform the gaze and prefigure other types of reality, in so doing essaying reconfigurations of our environment. One has only to call to mind the place held by aerial and satellite views in the entries to the most recent international consultation on the future of metropolitan Paris. In that context, which had as its aim to arrive at a global and totalising solution for the future of the French capital, the aerial views, at times lit by images or metaphors, contributed to the attempt to condense a complex reality. These attempts also revive a kind of illusion: that the mastery over problems and their solutions can come from above and, what is more, from a visual representation.¹⁸ For, as others have remarked, there are many nuances and mechanisms that escape those who see from the air. This apparently global gaze of the view from above expunges those scales, those articulations and rough patches that nevertheless give form to the spaces and their attendant practices that are found at ground level. The spatial structures of a megalopolis as approachable and walkable as Tokyo are difficult to seize in plan to a Westerner, and the aerial view of this urban tissue – endless and contiguous, pierced here and there by clusters of buildings and high-rise spears – is no more explicit when it comes to understanding the major forms and structures of the city. As attention to detail (of construction, of connections and linkages, etc.) takes precedence over the quest for a coherent, rationalised and planned totality, the apparent chaos that the aerial view of the Japanese capital conveys actually belies its concealed order and intrinsic urban life.

THE IMAGINARY OF REFORM

This radical vision that marked the aerial view was also active in reflections on how the city might respond to – and be transformed by – aerial mobility. For the city *seen* from an aeroplane was also that assemblage of artefacts that were, from the earliest days of aviation, the projections of urban thinkers. Here

again, fantasy writers such as Albert Robida, Jules Verne and H. G. Wells had already accustomed their readers to images of 'aerial cities' criss-crossed by all manner of airships, whose points of reference, uses and designs had acquired new dimensions.¹⁹ The actualisation of steerable flight placed this utopic horizon within the sphere of possibility and, as a consequence, it became incorporated within various projections for cities of the future.²⁰

At the turn of last century, professional urbanists published visions of a city as a space that was likely to be recast by the introduction of aerial mobility. These projects were conceived in the wake of major aviation shows, where the mass public was introduced to aerial inventions, particularly as – as already mentioned – the media actively relayed the events that took place there. Urban flights, air shows, exhibitions on the theme of aerial locomotion: the great public spectacles that took place in 1909 celebrated accomplishments and the setting of records, crystallised the unreal in the sphere of the possible and gave rise to a number of urban visions.²¹ We are familiar with the predictions of the architect-engineer Eugène Hénard who, in 1910, imagined the 'Cities of the Future' and envisaged an urban future of new horizons.²²

Just as man has now managed to mimic a gliding bird, it is by no means inconceivable that he will succeed in imitating an insect. In his *The War in the Air*, Wells had predicted a 'small practical device, easy to drive and easy to handle, suggestive of a bee'. I can subscribe to no higher authority than his and I am fully invested in this enticing science fiction.²³

This rather optimistic interpretation of Wells's book led Hénard to envisage an urban universe where all buildings would feature lift-garages containing cars and planes, the latter actually termed 'aerial motor cars'. Hénard built up his vision gradually, as if it were an aerial-based system. The 'Cities of the Future' were planned in a ringroad structure. The nature of aerial traffic, from the smallest vehicles to the most grand, determined the respective functions of the inner and outer suburbs. New, quasi-immaterial perimeters, dotted with lighthouse-style towers or else with 'aerial buoys', marked their boundaries and helped orient the aviators. Roof terraces and landing peaks traced a new architecture of urban ridges.

Across the Atlantic, ideas flew freely in New York, advocating this time a vertical stratification of the urban fabric and featuring the roof as a new urban plinth from and on to which airships would take off and land. Here, aerial mobility expanded and enlarged the urban third dimension.²⁴ A discourse exalting the dream of a freedom of movement that would release from earthly contingencies was being forged. The possibility of air transportation that was either individual

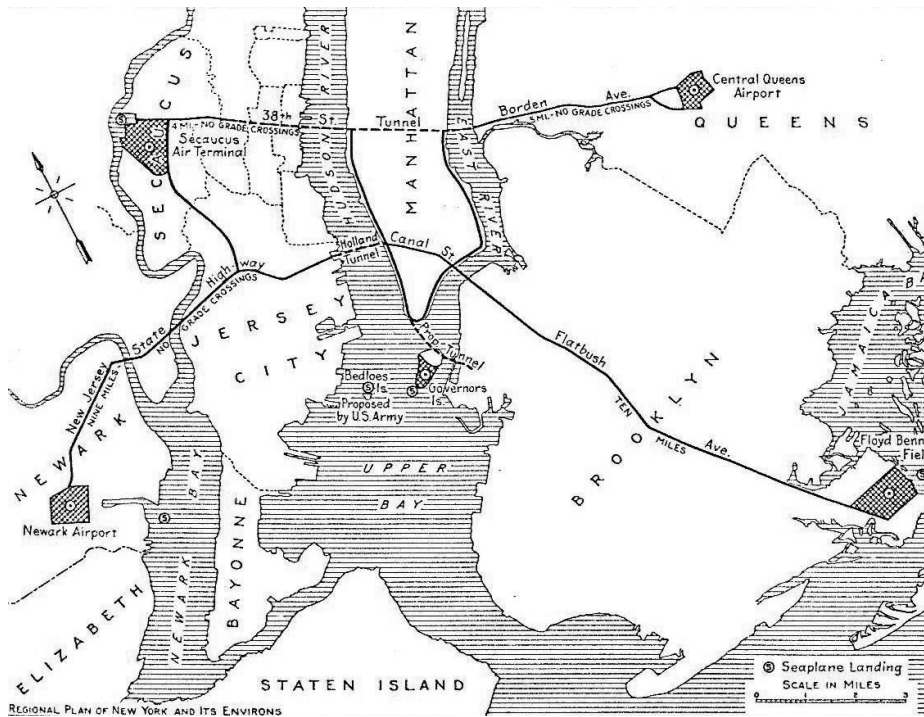
or collective was being conceived. Images of tiered cities or of city-regions, sustained by this new means of mobility, proliferated: the city embarked upon the conquest of the air.

Here too the New York visions did not, strictly speaking, invent totally new devices; rather, they legitimated already incubated ideas, which nevertheless had been judged unrealistic up to that point. In other words, the spectacular nature of the feats of aerial conquest lent credibility to those urban ideas that had been deemed merely fantastical. Therefore, the pan of the gaze was no longer literal – it became metaphorical, with a reversal of values engineered by visionary urbanists who would rely on these feats in order to renew the urban imaginary, the aerial metaphor operating here as both guarantee and directional vector for urban reform. Far from vying for the creation of a specific typology, the architects who made the aerial theme their own set in motion a structural transformation of the urban environment. It is therefore not the airport that emerges, from the beginning, as the main material and spatial figure of the intersection between aerial mobility and the urban environment; rather, it is the city, or better yet the city of the future, this finally plausible abstraction that the conquest of the air seemed to make real.²⁵

AN AUTONOMOUS WORLD

Similarly to the cities planned from above, the ‘aerial cities’ traversed by airships and structurally transformed in order to accommodate them raised the question of the tenuous distinction between a totalising and a totalitarian vision. For it is often the case that these visions laid the plans for a global universe, an autonomous world within which mastery would be perfected by the very recovery of this representability.

This panoptical vision was expressed especially in the various networks of systems drawn in the new urban visions. What prevailed in France was Eugène Hénard’s structure of aerial roundabouts, access to which was determined according to whether one flew in a ‘bee aeroplane’ or a ‘bird aeroplane’. In the United States, on the other hand, it was the isotropic grid that prevailed. A number of projects conveyed this mode of representation: for example, the global proliferation of *seadromes* that the engineer Edward Armstrong conceived of in 1923 as buoyed relays for oceanic and continental air traffic, at a time when the uninterrupted crossing of the Atlantic was yet to be realised; or the archipelago of urban devices with which New York architects imagined that the city would accommodate airships; or else the fabric of five airports suggested simultaneously by the *Regional*



[12.2] 'Important airports, existing and proposed, that would serve the Metropolitan center' (T. Adams, *The Building of the City*, 1931).

Plan of New York (1922–31), and the national checkerboard of 2,000 aerodromes on American soil that was proposed at the same time²⁶ (Figure 12.2).

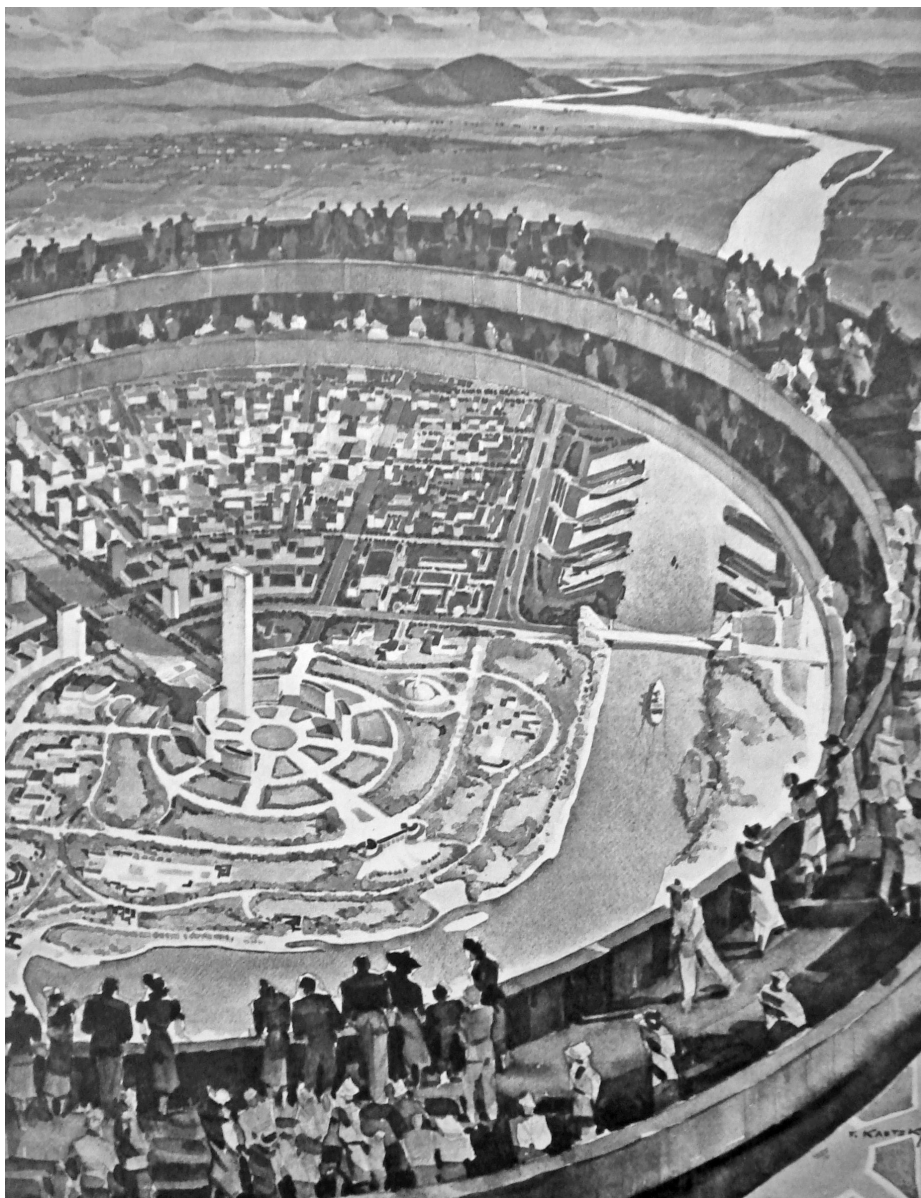
An enquiry into this urban imaginary, which has shaped aviation's infrastructure since the invention of steerable flight, enables us to establish relationships and to understand especially the transition between this era, in which aerial transport was imagined as a catalyst for urban transformation on the whole, and the years following World War II when, under the influence of significant changes occurring in the aeronautical industry, the airport became resituated outside the boundaries of the existing city. Far from ignoring the urban question, this shift gave rise to unprecedented places that were conceived as urban experiments, such as Idlewild airport in New York (renamed the John F. Kennedy International Airport) – whose urban design concept of *Terminal City* was commented upon in the architectural press²⁷ – or Orly airport in Paris, both of which were completed at the beginning of the 1960s. From 'aerial city' to 'airport city', the ambitious and spectacular development of airborne travel,

whether private or public, elitist or more routine, would generate countless projects, recreating urban *utopoi*, reviving the idea of an autonomous organism with the capacity to concentrate the complexity of the city into a unique system. The circumscribed isolation of contemporary airports or the use of the megastructure as the dominant architectural typology for an airport's buildings, would prolong the quest for a world that is set apart and within which total control can be exercised.

THE FUTURE AS SPECTACLE

If global and autonomous visions frequently feature in projects and their execution, this is a result of the development of various devices that could accommodate such totality. Seen in this way, the New York international exposition of 1939–40 represented a major turning point in the exploration of diverse media with which the city could be representationally constructed. In keeping with the utopic dream, the exposition devoted a central place to the aerial view. Visitors entering the pavilion entitled *United States Steel* could admire from above the city that the designer Walter Dorwin Teague had fashioned as a diorama, while the iconic Perisphere – a celebrated symbol of the Fair – housed a gigantic maquette of a model city designed by Henry Dreyfuss, 'Democracity', which spectators viewed from elevated walkways (Figure 12.3). Meanwhile, the *Futurama*, designed by Norman Bel Geddes, offered a simulated aeroplane journey by means of an automated train of sound-equipped seats. During a journey lasting some 15 minutes and covering 500 m of actual space, the city was *narrated* to the spectators who were 'flying' over it. The ride unveiled a landscape of farms, bridges and giant motorways stretching out over a vast terrain that was half city, half countryside. Streamlined glass skyscrapers, vast green spaces, rooftops featuring roof gardens or else aircraft docking pads, all created the sense of an Edenic city that the viewers were in the process of discovering from the air. Each day 27,000 visitors were encouraged to imagine themselves inhabiting the scale model they saw during this Wellsian trip by time-machine, stimulated as they were by the pre-recorded narration that kept them on tenterhooks: 'In just a moment, we shall be arriving at this crossroads [...] Entering upon this stage of tomorrow's world [...] the wondrous world of 1960 [...] means leaving 1939 twenty years behind! OPEN YOUR EYES TO THE FUTURE'.²⁸

Balconies, dioramas, aerial simulations – all these means were mobilised to make sense, through perspectival distancing, of an increasingly complex city. In terms of aerial infrastructure, the valence of spectacle – present from the



[12.3] Henry Dreyfuss, 'Democracy', New York World's Fair, 1939.



[12.4] Orly Airport, observation terraces, early 1960s.

very first aeronautical shows – became enhanced by the airport experience. The great airports that had been built in the 1930s proffered the choreography of planes moving on the ground. Le Bourget, LaGuardia, Tempelhof – all of them designed or considerably renovated before World War II and the rapid expansion of commercial aviation – were fitted with observation decks that recalled the pageantry of the epic air rallies. Here, the parallel with the imaginary seemed tangible. The airport viewing platform was a legacy both of the public rally stands from which the spectacle on the ground was surveyed and of fantastic high-level balconies from which the city could be seen from above.

Shortly after the war, the airport itself became the spectacle of modernity. The new Orly South airport is a willowy glass parallelepiped boasting a radical scale and aesthetics. The terrace crowning the building is its own world, opening



[12.5] Roissy 2, 2003.

out on to all vistas of the airport (Figure 12.4). Its interior mezzanines, glazed galleries and access ramps enable either vertiginous or panoramic views of the airport's activity. With its string of jewel-like terminals, the Idlewild airport in New York stages its own performance of itself. It is a continuous show: celebrities stride by, journalists commentate, inaugurations follow one another. And the media disseminate these spectacles. *Skyrooms*, walkways, *observation decks*, elevated terraces and restaurants, a whole gamut of scenographic props helps to stage this urban show of an unprecedented kind.²⁹ The burgeoning of 'showcase' airports also gave rise to a staggering number of scenarios written at the behest of airport officials. The airport resorted to film in order to narrate itself. These screenplays presented the airport's activity as an extraordinary adventure taking place in a fantastical universe.³⁰

The spectacular character of the airport did not disappear, however, when – towards the end of the 1960s – the figure of the visitor became progressively displaced by that of the passenger. In a certainly more catastrophic vein, novels such as *Airport* (1968), which was later adapted for film, depict a dramatic plot in an airport that is seen as a closed entity.³¹ This figure of the script in fact echoes the many films that were shot either partially or entirely in airports. *Stand-by*, *The Terminal*, *Tombés du ciel*³² – all these films turned the airport into their spatial and temporal unit of measurement, the backdrop as well as the very subject of the plot.³³ This screenplay vision of the airport – which would warrant its own study – is another connection to the fundamentally cinematic function of the aerial view.

Spectacle also continued through the emblematic devices designed and built in the space of the contemporary airport. Access ramps and gangways, balconies and mezzanines, glazed galleries and concourses, all speak of a dramatic vision of space inside the terminals. Outside, the curves and overhangs of infrastructural elements create the notion of a dynamic passage through space that visually captures the entire site. Arrival at the airport by car is frequently designed as a staged sequence of events.³⁴ The view from the aircraft of the airport's lights as night falls offers a vision that is almost magical (Figure 12.5).

MIRRORING THE EVOLVING CITY?

The imaginary of the airport *cum* city stands in relationship to the city planned from the air. Indeed, the upward motion – that of aerial panning to rediscover and rationalise – and the downward motion – that of the view from above that draws up new shapes and boundaries – produce specific figures that can be

compared to the models on which the space of aerial mobility was fashioned.

The shift from the spectacularisation of the city, via the aerial view, to staging the airport itself as urban spectacle, originates with the incremental consolidation of a field of visual representations generating a metropolitan culture for which the city of the future is understood in spectacular terms. A constant tension marks out this blend of the spectacle with the real: the spectacle of the city that unfurls when seen from the aeroplane; the spectacle of the airport that mimics yet leaves behind the city, without being able to completely portray it; the reality of a vision finally recovered from the urban totality; the reality of an artefact that exacerbates the expectations of our contemporary societies. Ascending from it the better to observe it and redesign it, getting closer to it the better to understand and transcend it, the city *seen* from the aeroplane, literally or figuratively, is defined by reference to the existing city in a play of mirrored reflections, imaged in the figures of thought that we have touched upon here: representability, clarification, rationalisation, panopticism and the construction of the spectacle. In other words, the city *viewed* from an aeroplane reproduces and projects, condenses and deforms, delays and anticipates the city it constantly looks at, all at the same time. In this dialogue between the city that is served by the airport and 'its' aerial counterpart, between the subject and its representations, studying these complex distortions offers us keys to unlocking the construction of our contemporary urbanity.

NOTES

- 1 Thierry Gervais, 'Un basculement du regard, les débuts de la photographie aérienne 1855–1914', *Études photographiques*, 9, May (2001): 102–8.
- 2 'La grande semaine de Champagne', *L'Illustration*, 3471, 4 September (1909): 153–64.
- 3 *L'Illustration*, 3654, 8 March (1913): 198–9.
- 4 Cited in Robert Wohl, *A Passion for Wings: Aviation and the Western Imagination, 1908–1918* (New Haven, CT, 1994), p.183.
- 5 Béatrice Joyeux-Prunel, 'Jouer sur l'espace pour maîtriser le temps. La géopolitique des avant-gardes européennes (1900–1914)', *EspacesTemps.net*, *Textuel*, 28 November 2006 (<http://espacestems.net/document2118.html>); Gerald Silk, 'Our future is in the air', in D. A. Pisano, ed., *The Airplane in American Culture* (Ann Arbor, University of Michigan Press, 2003), pp.14–15.
- 6 Gertrude Stein, *Picasso* [1938] (Paris: Christian Bourgeois, 2006), p.91.
- 7 Between September and December 1908 Wilbur Wright set more than eight records at Le Mans. It was not until the competition at Béthény that these records were broken by the French aviators.

- 8 Umberto Boccioni, 'Architecture futuriste, manifeste' [1913], in *Le Futurisme, 1909–1916* (Paris: Musée national d'art moderne, 1973), p.162.
- 9 Tullio Crali, *Incuneandosi nell'abitato (In tuffo sulla città)*, 1939, Museo d'Arte Moderna e Contemporanea di Trento e Rovereto.
- 10 A. Sutcliffe, ed., *Metropolis 1890–1940* (Chicago: University of Chicago Press, 1984); Richard Guy Wilson, Dianne H. Pilgrim, Dickran Tashjian, eds, *The Machine Age in America, 1918–1941* (New York: Harry N. Abrams, 2001), pp.22–41.
- 11 Greater Berlin (*Groß-Berlin*) was started in 1920, when the eponymous law (*Groß-Berlin-Gesetz*) was passed; while Greater London, after many decades of development, was officially recognised by the *London Government Act* of 1963, which came into effect on 1 April 1965.
- 12 Jean-Louis Cohen and André Lortie, eds, *Des fortifs au périf. Paris, les seuils de la ville* (Paris: Picard/ Éditions de l'Arsenal, 1991), pp.120–5.
- 13 Jean-Louis Cohen, *Le tour de Paris, les promenades aériennes de Roger Hennard* (Paris: Paris-Musées, 2006), p.11.
- 14 'Aerial survey of Manhattan Island', *Fairchild Aerial Camera Corporation*, Library of Congress, Washington, DC, 4 August 1921; 'Sectional aerial maps of the City of New York', 1 July 1924, *Fairchild Aerial Camera Corporation*, New York Public Library; See also Paul E. Cohen and Robert T. Augustyn, *Manhattan in Maps: 1527 – 1995* (New York: Rizzoli, 1997), pp.156–7.
- 15 Gaston Bachelard, 'Le rêve de vol' in *L'air et les songes, L'imagination en mouvement* [1943] (Paris: José Corti, 1994), pp.27–78.
- 16 Hugh Ferriss, 'Random thoughts of Hugh Ferriss', undated text (likely from the end of the 1940s) from the archives of Hugh Ferriss, Box 7, Second file, Avery Drawings, Columbia University, New York. (Translator note: in English in the original.)
- 17 Paul-Henry Chombart de Lauwe, *La découverte aérienne du monde* (Paris: Horizon de France, 1948).
- 18 Frédéric Pousin, 'Aerial views and the future of metropolitan Paris', *New Geographies*, 4, Harvard University Press (2011): 64–2.
- 19 Jules Verne, *Robur-le-Conquérant* (Paris: Hetzel, 1886); Albert Robida, *Le XXème siècle* (Paris: G. Decaux, 1883); Herbert G. Wells, *The War in the Air* (London: G. Bell and Sons, 1908).
- 20 Nathalie Roseau, *Aerocity, Quand l'avion fait la ville* (Marseille: Éditions Parenthèses, 2012). This work traces the history of the relationship between urbanism and the developments of aerial mobility in the contexts of Paris and New York.
- 21 Nathalie Roseau, 'Reach for the skies: aviation and urban visions circa 1910', *The Journal of Transport History*, 30, December (2009), pp.121–40.
- 22 Eugène Hénard, 'Les villes de l'Avenir', paper delivered at the Town Planning Conference held at the Royal Institute of British Architects on 14 October 1910, subsequently published in *L'Architecture*, 13 November (1910): 383–7.
- 23 *Ibid.*, p.386.
- 24 Several drawings from the first decade of the century illustrate this vision of a city that is thoroughly suffused with air traffic. Cf. Archives of Harvey W. Corbett, Box 4:1, Drawings and Archives, Avery Architectural and Fine Arts Library, Columbia University, New York.
- 25 Nathalie Roseau, 'Les métamorphoses de l'infrastructure, New York et l'imaginaire de la ville aérienne', in C. Prelorenzo and D. Rouillard, eds, *Le Temps des infrastructures* (Paris: L'Harmattan, 2007), pp.57–70.
- 26 'Seadromes', 1929, source: Musée de l'Air et de l'Espace, Le Bourget, France, Ref. 4B9576; Thomas Adams, Harold M. Lewis and Lawrence M. Orton, 'The Making of the City', in *The*

- Building of the City, Regional Plan of New York and Its Environs*, vol. 2 (New York: Committee on the Regional Plan of New York and Its Environs, 1931), pp.265–73.
- 27 See in particular ‘New Aerial Gateway to America’, *Architectural Forum*, February (1958): 79–87.
- 28 Folke T. Kihlstedt, ‘L’utopie réalisée, Les expositions universelles des années 30’, in Joseph Corn, ed., *Rêves de futur, Culture Technique*, 28 (1993), pp.102–17.
- 29 ‘Your weekend guide visits: Idlewild Airport’, in *The New Haven Register*, 25 August (1962), p.32; On the aspect of spectacle regarding Idlewild Airport, see Nathalie Roseau, ‘The obsolescence of the monument: the future of airports icons’, in D. Van den Heuvel et al., *The Challenge of Change: Dealing with the Legacy of the Modern Movement – Proceedings of the 10th International DOCOMOMO Conference* (Delft: IOS Press, 2008), pp.87–92.
- 30 For instance, ‘Number 1 World Way’, screenplay for the Los Angeles airport by Cate and Mc Glone Films, 6 March 1963, source: Archives Aéroports de Paris, Box 143, slip n.2005308; and another, for Orly airport, ‘Projet de scénario sur l’aéroport de Paris’, scenario for a film by Louis Pauwels and Robert Menegoz, 22 September 1960, source: Archives d’Aéroports de Paris, Box 141.
- 31 Arthur Hailey, *Airport* (New York: Doubleday, 1968).
- 32 Translator’s note: literally, *Fallen from the Sky*, yet with the English title of *Lost in Transit*.
- 33 *Stand-by*, directed by Roch Stéphanik, 2000; *The Terminal*, directed by Steven Spielberg, 2004; *Tombés du ciel (Lost in Transit)*, directed by Philippe Lioret, 1993.
- 34 Teresa Castro, *Le cinéma et la vocation cartographique des images. Questions de culture visuelle (The Cinema and the Cartographic Calling of Images: Issues in Visual Culture)*, PhD thesis, Université Paris III, 2008.